

ISO/~~TSD~~DTS 22726-1:202~~x~~(E)

Second edition

ISO/TC 204

Secretariat: ANSI

Date:

**Intelligent transport systems — Dynamic data and map database  
specification for connected and automated driving system  
applications —**

ISO/DTS 22726-1

<https://standards.iteh.ai/catalog/standards/iso/68d4cf23-ee96-4589-9f66-95ddec396133/iso-dts-22726-1>

**Part 1:  
Architecture and logical data model for harmonization of static map  
data**

*Systèmes de transport intelligents — Spécification de données dynamiques et de bases de données  
cartographiques pour les applications de système de conduite connectées et automatisées —*

*Partie 1: Architecture et modèle logique de données pour l'harmonisation des données cartographiques  
statiques*

© ISO ~~2023~~2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: + 41 22 749 01 11  
E-mail: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# iTeh Standards (<https://standards.iteh.ai>) Document Preview

ISO/DTS 22726-1

<https://standards.iteh.ai/catalog/standards/iso/68d4cf23-ee96-4589-9f66-95ddec396133/iso-dts-22726-1>

## Contents

|   |     |
|---|-----|
| Foreword .....  | vi  |
| Introduction .....  | vii |
| Part 1: Architecture and logical data model for harmonization of static map data .....  | 1   |
| 1 — Scope .....   | 1   |
| 2 — Normative references .....  | 1   |
| 3 — Terms and definitions .....   | 1   |
| 4 — Abbreviated terms and symbols .....   | 3   |
| 5 — Document structure and conformance .....  | 3   |
| 5.1 — Document structure .....  | 3   |
| 5.2 — Conformance .....   | 4   |
| 6 — Architecture .....  | 4   |
| 7 — Logical data model of map data .....  | 5   |
| 7.1 — Overall data model of map data .....  | 5   |
| 7.2 — Transportation package .....  | 6   |
| 8 — MHAD package .....  | 7   |
| 8.1 — Configuration of MHAD package .....   | 7   |
| 8.2 — Belt concept for roadway, intersection and lane .....                             | 8   |
| 8.3 — Relationship between road feature and road structures and equipment feature ..... | 9   |
| 8.4 — MHAD class .....  | 10  |
| 9 — MHADCommonProperty package .....  | 12  |
| 9.1 — General .....   | 12  |
| 9.2 — GeneralCommonProperty package .....   | 12  |
| 9.2.1 — General .....   | 12  |
| 9.2.2 — Class definitions .....   | 13  |
| 9.3 — CommonPhysicalCharacteristics package .....                                       | 21  |
| 9.3.1 — General .....   | 21  |
| 9.3.2 — Class definitions .....   | 22  |
| 9.4 — TrafficRegulation package .....   | 37  |
| 9.4.1 — Modelling policy of Traffic regulations .....                                   | 37  |
| 9.4.2 — General description .....   | 38  |
| 9.4.3 — TrafficRegulation(Main) sub-package .....                                       | 39  |
| 9.4.4 — TimeCondition sub-package .....   | 50  |
| 9.4.5 — VehicleCondition sub-package .....  | 62  |
| 10 — RoadBeltNetwork package .....  | 87  |
| 10.1 — General .....  | 87  |
| 10.2 — RoadBeltNetworkFeature sub-package .....   | 87  |
| 10.2.1 — General .....  | 87  |
| 10.2.2 — Modelling policy of RoadBeltNetwork .....                                      | 90  |
| 10.2.3 — Modelling policy of Manoeuvre Path .....                                       | 93  |
| 10.2.4 — Class definitions .....  | 94  |
| 10.3 — RoadBeltFeatureProperty sub-package .....  | 123 |
| 10.3.1 — General .....  | 123 |
| 10.3.2 — Class definitions .....  | 123 |
| 10.4 — RoadBeltSegmentProperty sub-package .....  | 132 |
| 10.4.1 — General .....  | 132 |
| 10.4.2 — Class definitions .....  | 133 |

|  |     |
|--|-----|
| 11 — LaneBeltNetwork package.....  | 148 |
| 11.1 — General.....  | 148 |
| 11.2 — LaneBeltNetworkFeature sub-package.....   | 148 |
| 11.2.1 — General.....  | 148 |
| 11.2.2 — Modelling policy of the LaneBeltNetwork.....  | 150 |
| 11.2.3 — Modelling policy of Manoeuvre Lane Path.....  | 151 |
| 11.2.4 — Class definitions.....  | 152 |
| 11.3 — LaneBeltFeatureProperty sub-package classes.....  | 171 |
| 11.3.1 — General.....  | 171 |
| 11.3.2 — Class definitions.....  | 172 |
| 11.4 — LaneBeltSegmentProperty sub-package.....  | 176 |
| 11.4.1 — General.....  | 176 |
| 11.4.2 — Class definitions.....  | 176 |
| 12 — RoadStructureAndEquipment package.....  | 183 |
| 12.1 — General description.....  | 183 |
| 12.1.1 — Configuration of RoadStructureAndEquipment package.....   | 183 |
| 12.1.2 — Position and geometry policy for the road structures and pieces of road equipment features..... | 184 |
| 12.1.3 — RoadStructureAndEquipment class.....  | 185 |
| 12.2 — RoadEquipment sub-package.....  | 187 |
| 12.2.1 — General description.....  | 187 |
| 12.2.2 — RoadEquipmentFeature sub-package.....   | 187 |
| 12.2.3 — RoadEquipmentProperty sub-package.....  | 216 |
| 12.3 — RoadMarking sub-package.....  | 224 |
| 12.3.1 — General description.....  | 224 |
| 12.3.2 — RoadMarkingFeature sub-package.....   | 224 |
| 12.3.3 — RoadMarkingProperty sub-package.....  | 238 |
| 12.4 — RoadStructure sub-package.....  | 246 |
| 12.4.1 — General description.....  | 246 |
| 12.4.2 — RoadStructureFeature sub-package.....   | 247 |
| 12.4.3 — RoadStructureProperty sub-package.....  | 269 |
| 12.5 — RSECommonProperty package.....  | 275 |
| 12.5.1 — General description.....  | 275 |
| 12.5.2 — Class definitions.....  | 276 |
| 13 — Relation between the MHAD and the dynamic information.....  | 282 |
| Annex A (normative) Abstract test suite.....   | 283 |
| Abstract test suite.....   | 283 |
| Test case identifier: Data structure test.....   | 283 |
| Annex B (informative) Basic data types and stereotypes — concepts and definitions.....                   | 284 |
| Annex C (informative) Resolution and accuracy of the MHAD.....   | 286 |
| General.....   | 286 |
| Resolution and accuracy of the position data.....  | 286 |
| Annex D (informative) Comparison of the road network models of MHAD and existing map models.....         | 288 |
| Overview of a traditional road network (ISO/TS 20452 model).....   | 288 |
| Overview of an extended road network (ISO 14296 model).....  | 288 |
| Overview of a road belt network (ISO/TS 22726-1 model).....  | 288 |
| Overview of a lane belt network (TS 22726 model).....  | 289 |
| Comparison summary.....  | 289 |
| Bibliography.....  | 291 |

|   |      |
|---|------|
| Foreword .....  | vi   |
| Introduction .....  | viii |
| 1 Scope .....   | 1    |
| 2 Normative references .....  | 1    |
| 3 Terms and definitions .....   | 1    |
| 4 Abbreviated terms and symbols .....   | 3    |
| 5 Document structure and conformance .....  | 4    |
| 6 Architecture .....  | 4    |
| 7 Logical data model of map data .....  | 7    |
| 8 MHAD package .....  | 10   |
| 9 MHADCommonProperty package .....  | 18   |
| 10 RoadBeltNetwork package .....  | 108  |
| 11 LaneBeltNetwork package .....  | 179  |
| 12 RoadStructureAndEquipment package .....  | 220  |
| 13 Relation between the MHAD and the dynamic information .....                                    | 63   |
| Annex A (normative) Abstract test suite .....   | 64   |
| Annex B (informative) Basic data types and stereotypes — concepts and definitions .....           | 65   |
| Annex C (informative) Resolution and accuracy of the MHAD .....                                   | 67   |
| Annex D (informative) Comparison of the road network models of MHAD and existing map models ..... | 69   |
| Bibliography .....  | 74   |

ISO/DTS 22726-1

<https://standards.iteh.ai/catalog/standards/iso/68d4cf23-ee96-4589-9f66-95ddec396133/iso-dts-22726-1>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

~~Attention is drawn to the possibility that some of the elements of this document may be involved in the subject of a patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).~~

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

~~This second edition cancels and replaces the first edition (ISO/TS 22726-1:2023), which has been technically revised.~~

The main changes are as follows:

- addition of a traffic regulation model consisting of traffic regulations, time conditions, and vehicle conditions;
- addition of traffic regulation attributes in the carriageway and lane data sets;
- addition of "carriageway manoeuvre path" and "lane manoeuvre path" classes in the carriageway and lane datasets;
- addition of the "crossfall" class as one of the physical characteristics for carriageways and lane data sets;
- integration of both major and minor road structures packages into the road structure sub-package;
- addition of an upper space feature attribute in the carriageway data set;
- addition of properties which define the features in the space under the vehicle bridge or the objects of the super- or sub-structures;

- addition of a parking lot marking class in the road marking sub-package;
- change of "island nose" to "shock absorption device" class name;
- change of "speed bump" to "traffic calming device" class name;
- change of "bus stop board" to "public transport stop point board" class name;
- change of "inaccessible sloped zone" to "inaccessible zone" class name;
- integration of both "bridge" and "viaduct" into the "vehicle bridge" class;
- additional technical and editorial revisions.

A list of all parts in the ISO 22726 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# iTeh Standards (<https://standards.itih.ai>) Document Preview

ISO/DTS 22726-1

<https://standards.itih.ai/catalog/standards/iso/68d4cf23-ee96-4589-9f66-95ddec396133/iso-dts-22726-1>